

WHAT IS CLAIMED IS:

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a- 1. An aluminum alloy comprising up to about 4.5 wt % copper, from about 0.6 to 6.0 wt % magnesium and from about 0.01 to 0.99 wt % lithium.

5 2. The aluminum alloy of Claim 1, wherein said lithium content is from about 0.25 to 0.99 wt %.

3. The aluminum alloy of Claim 2, wherein said lithium content is from about 0.25 to 0.95 wt %.

10 4. The aluminum alloy of Claim 3, wherein said lithium content is from about 0.35 to 0.95 wt %.

15 5. The aluminum alloy of Claim 1, including a dispersoid selected from the group consisting of chromium, vanadium, titanium and zirconium and mixtures thereof in the amount of from about 0.0 to 0.6 wt %.

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or 20 6. The aluminum alloy of Claim 1, including a dispersoid selected from the group consisting of manganese, nickel, iron, hafnium, scandium and mixtures thereof in the amount of from about 0.0 to 1.0 wt %.

25 7. The aluminum alloy of Claim 1, including a first dispersoid selected from the group consisting of chromium, vanadium, titanium, zirconium and mixtures thereof in the amount of from about 0.0 to 0.6 wt % and a second dispersoid selected from the group consisting of manganese, nickel, iron, hafnium, scandium and mixtures thereof in the amount of from about 0.04 to 1.0 wt %.

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8. The aluminum alloy of Claim 1, including other alloying elements selected from the group consisting of zinc, silver, silicon and mixtures thereof in the amount of from about 0.0 to 2.0 wt %.

5 9. A damage tolerant aircraft part made from the alloy of Claim 1.

10. A fuselage section made from the alloy of Claim 1.

10 11. A lower wing section made from the alloy of Claim 1.

15 12. An aluminum alloy comprising copper, magnesium and lithium, the lithium content being from about 0.01 to 0.99 wt % and the copper and magnesium weight percent values falling within a closed area on a graph with wt % copper on the x-axis and wt % magnesium on the y-axis, said closed area being bounded by generally straight lines joining the following points:

POINT 1 = 0 Cu, 0.6 Mg  
POINT 2 = 4.5 Cu, 0.6 Mg  
POINT 3 = 4.5 Cu, 6.0 Mg  
POINT 4 = 0 Cu, 6.0 Mg  
and back to POINT 1.

20 13. The aluminum alloy of Claim 12, wherein the copper and magnesium weight percent values fall within a closed area on a graph with wt % copper on the x-axis and

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wt % magnesium on the y-axis, said closed area being bounded by generally straight lines joining the following points:

POINT 1 = 0 Cu, 0.6 Mg  
POINT 2 = 4.5 Cu, 0.6 Mg  
POINT 3 = 4.5 Cu, 2.3 Mg  
POINT 4 = 2.0 Cu, 6.0 Mg  
POINT 5 = 0 Cu, 6.0 Mg  
and back to POINT 1.

14. The aluminum alloy of Claim 12, wherein the copper and magnesium weight percent values fall within a closed area on a graph with wt % copper on the x-axis and wt % magnesium on the y-axis, said closed area being bounded by generally straight lines joining the following points:

POINT 1 = 0 Cu, 0.6 Mg  
POINT 2 = 4.5 Cu, 0.6 Mg  
POINT 3 = 1.5 Cu, 6.0 Mg  
POINT 4 = 0 Cu, 6.0 Mg  
and back to POINT 1.

15. The aluminum alloy of Claim 12, wherein the copper and magnesium weight percent values fall within a closed area on a graph with wt % copper on the x-axis and wt % magnesium on the y-axis, said closed area being bounded by generally straight lines joining the following points:

POINT 1 = 0 Cu, 0.6 Mg  
POINT 2 = 4.5 Cu, 0.6 Mg  
POINT 3 = 4.5 Cu, 2.0 Mg  
POINT 4 = 0 Cu, 2.0 Mg  
and back to POINT 1.

16. The aluminum alloy of Claim 12, wherein said lithium content is from about 0.25 to 0.99 wt %.

17. The aluminum alloy of Claim 16, wherein said lithium content is from about 0.25 to 0.95 wt %.

5 18. The aluminum alloy of Claim 17, wherein said lithium content is from about 0.35 to 0.95 wt %.

10 19. The aluminum alloy of Claim 12, including a dispersoid selected from the group consisting of chromium, vanadium, titanium and zirconium and mixtures thereof in the amount of from about 0.0 to 0.6 wt %.

23 20. The aluminum alloy of Claim 12, including a dispersoid selected from the group consisting of manganese, nickel, iron, hafnium, scandium and mixtures thereof in the amount of from about 0.0 to 1.0 wt %.

15 21. The aluminum alloy of Claim 12, including a first dispersoid selected from the group consisting of chromium, vanadium, titanium, zirconium and mixtures thereof in the amount of from about 0.0 to 0.6 wt % and a second dispersoid selected from the group consisting of 20 manganese, nickel, iron, hafnium, scandium and mixtures thereof in the amount of from about 0.04 to 1.0 wt %.

22. The aluminum alloy of Claim 12, including other alloying elements selected from the group consisting of zinc, silver, silicon and mixtures thereof in 25 the amount of from about 0.0 to 2.0 wt %.

23. A damage tolerant aircraft part made from the alloy of Claim 12.

24. A fuselage section made from the alloy of Claim 12.

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25. A lower wing section made from the alloy of  
Claim 12.

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